

patent in view of U.S. Patent No. 5,995,279 (Ogino, et al.). Applicant traverses these rejections.

As recited in independent Claim 7, Applicant's invention is directed to a diffraction optical element in which a plurality of diffraction gratings are laminated. The diffraction gratings include a first diffraction grating having a material of a predetermined dispersion and a second diffraction grating having a material of a dispersion different from that of the first diffraction grating. An imaginary surface including tips of grating portions of the first diffraction grating is a curved surface. Similarly, an imaginary surface including tips of grating portions of the second diffraction grating is also a curved surface. The pitches at positions of tips of corresponding grating portions of the first and second diffraction gratings are equal over the area of use.

The Ishii patent is directed to a diffractive optical element having first, second, and third optical regions stacked on each other. As shown in Figure 12 of the Ishii patent, while outer surfaces 303 and 304 of the optical element may be curved in shape, the tips of grating 201 and the tips of grating 202 define straight lines in the plane of the drawing sheet. Therefore, an imaginary surface including the tips of grating 201 or 202 would be flat, not curved.

The Ogino, et al. patent is directed to an optical element with a cemented lens. The Office Action merely cites this patent as describing a diffraction optical element formed on a cemented surface of a cemented lens. Applicant submits that this patent fails to remedy the deficiencies discussed above with respect to the Ishii patent.

Accordingly, Applicant submits that the Ishii and Ogino, et al. patents, taken alone or in combination, fail to disclose or suggest at least the features of a first diffraction grating with a material of a predetermined dispersion, wherein an imaginary surface including tips of grating portions of the first diffraction grating is a curved surface, and a second diffraction grating with a material of a dispersion different from that of the first diffraction grating, wherein an imaginary surface including tips of grating portions of the second diffraction grating is a curved surface, as recited in independent Claim 7.


For the foregoing reasons, Applicant submits that independent Claim 7 is allowable over the applied patents, and requests withdrawal of the rejections under 35 U.S.C. §§ 102 and 103.

The remaining claims under consideration in the present application are dependent claims which depend from independent Claim 7, and thus are allowable over the documents of record for reasons noted above with respect to Claim 7. In addition, each recites features of the invention still further distinguishing it from the applied documents. Applicant requests favorable and independent consideration thereof.

Applicant submits that all outstanding matters in this application have been attended to and that the application is in condition for allowance.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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**VERSIONS WITH MARKINGS TO SHOW
CHANGES MADE TO THE CLAIMS**

7. (Amended) A diffraction optical element in which a plurality of

- diffraction gratings are laminated, comprising:
- a first diffraction grating which is formed on a curved surface with a material of a predetermined dispersion, wherein an imaginary surface including tips of grating portions of said first diffraction grating is a curved surface; and
- a second diffraction grating which is formed on a curved surface with a material of a dispersion different from that of [the] said first diffraction grating and adjacent to [the] said first diffraction grating, wherein an imaginary surface including tips of grating portions of said second diffraction grating is a curved surface,

wherein the pitches at positions of tips of corresponding grating portions of [the] said first and second diffraction gratings are equal over the area of use.

18. (Amended) A diffraction optical element according to Claim 7, wherein [the] said first and second diffraction gratings are disposed via an air layer.